

IN THE CLAIMS:

The following claims have been added in this reissue application:

I 23. An apparatus for controlling recording in a digital video recording

device, comprising:

an input unit receiving digital video data, the digital video data including

I-frames of intra-coded digital picture data;

a data generating circuit generating a plurality of relative position data,

each of the plurality of relative position data associated with one of a plurality

of specific data in the received digital video data, wherein the specific data

includes the intra-coded digital picture data, and wherein each of the plurality

of relative position data is indicative of a plurality of relative positions from a

current nth specific data location on a digital recording medium to each of a

n+1, n+2, ..., n+m specific data location on the digital recording medium, where

m is greater than 2; and

a recording unit coupled to the data generating circuit and recording the

digital video data and the plurality of relative position data on the digital

recording medium such that each specific data includes the associated relative

position data, as well as the intra-coded digital picture data.

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24. The apparatus of claim 23, further comprising:

a detection circuit coupled to the input unit and detecting the specific data from the received digital video data; and wherein the data generating circuit is coupled to the detection circuit.

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25. The apparatus of claim ²¹~~24~~⁵⁹, wherein the data generating circuit includes:

a timing signal generating circuit generating a timing control signal; and a multiplexer coupled to the timing signal generating circuit and selectively outputting the detected specific data and the digital video data based on the timing control signal.

26. The apparatus of claim 23, wherein the digital medium includes a magnetic medium.

27. The apparatus of claim 23, wherein each of the plurality of relative position data includes a plurality of distance indicators, each distance indicator indicating a distance between the current nth specific data location and one of the n+1, n+2, ..., n+m specific data locations.

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28. The apparatus of claim 27, wherein said distance is represented with a number of distance units present between the current nth specific data location and one of the n+1, n+2, ..., n+m specific data locations.

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29. The apparatus of claim 28, wherein the distance unit is a track on the storage medium.

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30. The apparatus of claim 23, wherein the recording unit includes: a formatting circuit forming a data block associated with each specific data, the data block including the associated relative position data.

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31. An apparatus for controlling reproduction in a digital video reproducing device, comprising:

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a reproducing unit reproducing digital video data, the digital video data including I-frames of intra-coded digital picture data stored on a digital recording medium, the digital data including a plurality of specific data, each of said plurality of specific data including relative position data and intra-coded digital picture data, each relative position data indicative of a plurality of relative positions from a current nth specific data location on a digital recording medium to each of a n+1, n+2, ..., n+m specific data location on the digital recording medium, where m is greater than 2;

a detection circuit coupled to the reproducing unit and detecting one of the plurality of relative position data from the reproduced digital video data;

and

a control circuit coupled to the detection circuit, receiving a command and controlling the reproducing unit to reproduce at least another specific data based on the detected relative position data and the command.

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32. The apparatus of claim 31, wherein the detection circuit includes:

a decoding circuit selecting one of the relative positions represented in said detected relative position data based on the command.

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33. The apparatus of claim 31, wherein each of the plurality of relative position data includes a plurality of distance indicators, each distance indicator indicating a distance between the current nth specific data location and one of the n+1, n+2, ..., n+m specific data locations.

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34. The apparatus of claim 33, wherein said distance is represented with a number of distance units present between the current nth specific data location and one of the n+1, n+2, ..., n+m specific data locations.

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35. The apparatus of claim 34, wherein the distance unit is a track on the digital medium.

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36. The apparatus of claim ³⁶~~31~~, wherein the reproducing unit includes a motor for moving the digital medium.

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37. The apparatus of claim ³⁶~~36~~, wherein the control circuit includes: a calculating circuit calculating a rotational speed of the motor based on the detected relative position data.

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38. The apparatus of claim ³¹~~31~~, wherein the reproducing unit includes reading heads and signal processing circuits.

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39. A method for controlling recording in a digital video recording device, comprising the steps of:

receiving digital video data, the digital video data including I-frames of intra-coded digital picture data;

generating a plurality of relative position data, each of the plurality of relative position data associated with one of a plurality of specific data in the received digital video data, wherein the specific data includes the intra-coded digital picture data, and wherein each of the plurality of relative position data is indicative of a plurality of relative positions from a current nth specific data location on a digital recording medium to each of a n+1, n+2, ..., n+m specific data location on the digital recording medium, where m is greater than 2; and

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recording the digital video data and the plurality of relative position data
on the digital medium such that each specific data includes the associated
relative position data, as well as the intra-coded digital picture data.

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~~40~~³⁹ 40. The method of claim ~~39~~³⁹, further comprising the step of:
generating a timing control signal; and
wherein said recording step includes,
recording the digital video data and the specific data based on the timing
control signal.

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~~41~~⁴² 41. The method of claim ~~39~~³⁹, wherein in said recording step, the digital
medium includes a magnetic medium.

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~~42~~⁴² 42. The method of claim ~~39~~³⁹, wherein each of the plurality of relative
position data includes a plurality of distance indicators, each distance
indicator indicating a distance between the current nth specific data location
and one of the n+1, n+2, ..., n+m specific data locations.

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~~43~~⁴² 43. The method of claim ~~42~~⁴², wherein said distance is represented with a
number of distance units present between the current nth specific data
location and one of the n+1, n+2, ..., n+m specific data locations.

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44. The method of claim ⁴⁴~~43~~, wherein the distance unit is a track on the digital medium.

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45. The method of claim ⁴⁵~~44~~, wherein said recording step includes the step of:

forming a data block associated with each specific data, the data block including the associated relative position data.

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46. A method for controlling reproduction in a digital video reproducing device, comprising the steps of:

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reproducing digital video data, the digital video data including I-frames of intra-coded digital picture data stored on a digital recording medium, the digital video data including a plurality of specific data, each of said plurality of specific data including relative position data and intra-coded digital picture data, each relative position data indicative of a plurality of relative positions from a current nth specific data location on a digital recording medium to each of a n+1, n+2, ..., n+m specific data location on the digital recording medium, where m is greater than 2;

detecting one of the plurality of relative position data from the reproduced digital video data;

receiving a command; and

reproducing at least another specific data based on the detected relative position data and the command.

47. The method of claim 46, wherein said reproducing step includes the step of:

decoding the detected relative position data by selecting one of the relative positions represented in the detected relative position data based on the command to reproduce the at least another specific data.

48. The method of claim 46, wherein each of the plurality of relative position data includes a plurality of distance indicators, each distance indicator indicating a distance between the current nth specific data location and one of the n+1, n+2, ..., n+m specific data locations.

49. The method of claim 48, wherein said distance is represented with a number of distance units present between the current nth specific data location and one of the n+1, n+2, ..., n+m specific data locations.

50. The method of claim 49, wherein the distance unit is a track on the digital medium.

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51. The method of claim 46, wherein said reproducing step includes the step of:

calculating a rotational speed of a motor for moving the digital medium based on the detected relative position data.

52. A digital video recording medium having a data structure for controlling a reproducing operation, comprising:

a plurality of specific data areas, each specific data area storing digital specific data including intra-coded digital picture data and associated relative position data, the associated relative position data indicative of a plurality of relative positions from a current nth specific data location on the digital video recording medium to each of a n+1, n+2, ..., n+m specific data location on the digital video recording medium, where m is greater than 2.

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